



# UNITED STATES PATENT AND TRADEMARK OFFICE

*mn*  
UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/018,518	07/12/2002	Joe F. Zhou	42390.P9657	2646

7590 05/18/2007  
John P Ward  
Blakely Sokoloff Taylor & Zafmann  
7th Floor  
12400 Wilshire Boulevard  
Los Angeles, CA 90025

EXAMINER
----------

NGUYEN, CINDY

ART UNIT	PAPER NUMBER
----------	--------------

2161

MAIL DATE	DELIVERY MODE
-----------	---------------

05/18/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/018,518	ZHOU ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Cindy Nguyen	2161	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 February 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 35, 36 is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 July 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Continued Examination Under 37 CFR 1.114***

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 04/11/06 has been entered.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 7 recites the limitation "the semantic relationships". There is insufficient antecedent basis for this limitation in the claim.

Claim 12 recites the limitation "the new search term". There is insufficient antecedent basis for this limitation in the claim.

Claim 26 recites the limitation "the semantic relationships". There is insufficient antecedent basis for this limitation in the claim.

Claim 29 recites the limitation "the new search term". There is insufficient antecedent basis for this limitation in the claim.

Claim 30 recites the limitation "reformulating the new query". There is insufficient antecedent basis for this limitation in the claim.

Claim 33 recites the limitation "using a predetermined algorithm". There is insufficient antecedent basis for this limitation in the claim.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 19, 22 and 27 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

***Claim Rejections - 35 USC § 101***

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 19-30 are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Regarding claim 19, this claimed subject matter lacks a practical application of a judicial exception (law of nature, abstract idea, naturally occurring article/phenomenon) since it fails to produce a useful, concrete and tangible result. Specifically, the claimed subject matter does not produce a tangible result because the claimed subject matter fail to produce a result that is limited to having a real world value rather than a result that may be interpreted to be abstract in nature as, for example, a thought, a computation or manipulated data. More specifically, the claimed subject matter

provides for a concept network that includes search terms and related terms that are linked together based on semantic relationships and appear together in at least one sentence in a web page. This produced result remains in the abstract and, thus, fails to achieve the required status of having real world value. It is neither computer components nor statutory processes, as they are not "acts" being performed, such claimed .

Claims 20 and 21, fully incorporating the deficiencies of their parent claim are likewise rejected.

Regarding claim 22-30, a computer-readable medium that provides instructions. "Computer-readable medium" as defined in the specification (page 20, 2<sup>nd</sup> paragraph ) includes other form of propagated signals (e.g., carrier waves, infrared signals, digital signals, etc.); etc. A signal encoded with functional descriptive material does not fall within any of the categories of patentable subject matter. Therefore, claim 22-30 are not statutory (As set forth in § 101, a claimed signal is clearly not a process under § 101 because it is not a series of steps. A claimed signal has no physical structure, does not itself perform any useful, concrete and tangible result, and does not fit within the definition of a machine. A claimed signal is not matter, but a form or energy, and therefore is not a composition of matter or product.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-9, 11-15, 22-26, 31 and 33-34 are rejected under 35 U.S.C. 102(e) as being anticipated by "The Spider's Apprentice" written by Linda Barlow,  
<http://web.archive.org/web/20000815211428/http://www.monash.com/spidap4.html>  
(hereafter Linda).

Regarding claims 1 and 22, Linda discloses: A method and a machine-readable medium that provides instructions comprising:

receiving a search term for a query (i.e., in section keyword searching, page 1, 1<sup>st</sup> paragraph, Linda);

searching a network of concept terms for terms related to the search term (i.e., a concept based search returns hits on documents that are about the subject/thema you're exploring, even if the words in the document don't precisely match the words you enter into the query, section concept-based searching, page 2, 1<sup>st</sup> paragraph, Linda), wherein the network of concept terms is associated with a subject matter domain having a plurality of predetermined relevant terms (i.e., for example, the word heart, when used in the medical/health context, would be likely to appear with such words as coronary,

Art Unit: 2161

artery, lung, stroke, cholesterol, pump, blood, attack, and arteriosclerosis. If the word heart appears in a document with others words such as flowers, candy, love, passion, and valentine, a very different context is established, and the search engine returns hilts on the subject of romance, section Concept-based search, page 2, Linda), wherein each related term and the search term appear together in at least one sentence in a web page residing on websites located on servers connected to and wherein the web page includes at least one of the relevant terms (i.e., for example, the word heart, when used in the medical/health context, would be likely to appear with such words as coronary, artery, lung, stroke, cholesterol, pump, blood, attack, and arteriosclerosis. If the word heart appears in a document with others words such as flowers, candy, love, passion, and valentine, a very different context is established, and the search engine returns hilts on the subject of romance, page 2, section Concept-based search, , 5<sup>th</sup> paragraph Linda);

reformulating the query using the search term and the related terms, before performing a search for documents based on the search term(i.e., search refining options differ from one search engine to another, but some of the possibilities include the ability to search on more than one word, to give more weight to one search term than you give to another, and to exclude words that might be likely to muddy the results, you might also be able to search on proper names, on phrases, and on words that are found within a certain proximity to other search terms, section Refining your search, page 3, 2<sup>nd</sup> paragraph, Linda);

searching a local database for data terms that match the search term and the related terms, wherein the data terms are generated based on occurrence frequencies within a documents residing on the websites (i.e., some search engines consider both the frequency and the positioning of keywords to determine relevancy, reasoning that if the keywords appear early in the document, or in the headers, ...it also takes into consideration whether the documents that emerge as hits are frequently linked to other documents on the web, reasoning that if other folks consider them important, section Relevancy rankings, 5<sup>th</sup> paragraph , Linda);

and in response to matching data terms with the search terms and related terms corresponding to the data terms, retrieving the documents from the respective websites (i.e., the documents that emerge as hits are frequently linked to other documents on the web, reasoning that if other folks consider them important, section Relevancy rankings, 5<sup>th</sup> paragraph , Linda).

Regarding claims 2 and 23, all the limitations of these claims have been noted in the rejection of claims 1 and 22 above, respectively. In addition, Linda disclose: displaying the retrieved documents, the search terms and the related terms, wherein at least one of the related terms includes a link, when activated, a further search of concept terms is conducted and one or more further related terms are presented, and wherein searching the local database and retrieving the documents are iteratively performed based on the further related terms (i.e., for example, Lycos ranks hits according to how many times your keywords appear in their indices of the document



and in which fields they appear... hits are frequently linked to other documents on the web, section Relevancy rankings, 5<sup>th</sup> paragraph, Linda).

Regarding claims 3 and 24, all the limitations of these claims have been noted in the rejection of claims 1 and 22 above, respectively. In addition, Linda discloses: further comprising generating a summary of the documents for the searched terms that match the search term and the related terms (i.e., most of the search engines returns results with confidence or relevancy rankings, in other words, they list the hits according to how closely they think the results match the query, page 4, section Relevancy Rankings, 1<sup>st</sup> paragraph, Linda).

Regarding claim 4, all the limitations of this claim have been noted in the rejection of claim 3. In addition, Linda discloses: wherein the summary includes the searched terms and a beginning portion of the documents (i.e., for example, Lycos ranks hits according to how many times your keywords appear in their indices of the document and in which fields they appear (i.e., in headers, titles or text), page 4, section Relevancy Rankings, 5<sup>th</sup> paragraph, Linda).

Regarding claim 5, all the limitations of this claim have been noted in the rejection of claim 1. In addition, Linda discloses: wherein the network is the Internet (page 3, section Refining your search, 3<sup>rd</sup> paragraph, Linda).

Regarding claims 6 and 25, all the limitations of these claims have been noted in the rejection of claims 1 and 22 above, respectively. In addition, Linda discloses: wherein the network of concept terms includes links between related terms, wherein the links are based on semantic relationship (i.e., for example, the word heart, when used in the

Art Unit: 2161

medical/health context, would be likely to appear with such words as coronary, artery, lung, stroke, cholesterol, pump, blood, attack, and arteriosclerosis. If the word heart appears in a document with others words such as flowers, candy, love, passion, and valentine, a very different context is established, and the search engine returns hits on the subject of romance, page 2, section Concept-based search, , 5<sup>th</sup> paragraph Linda).

Regarding claims 7 and 26 , all the limitations of these claims have been noted in the rejection of claims 1 and 22 above, respectively. In addition, Linda discloses: wherein the semantic relationships are selected from a group consisting of canonical (logical form), synonym, hyponym, hypernym, part (i.e., for example, the word heart, when used in the medical/health context, would be likely to appear with such words as coronary, artery, lung, stroke, cholesterol, pump, blood, attack, and arteriosclerosis. If the word heart appears in a document with others words such as flowers, candy, love, passion, and valentine, a very different context is established, and the search engine returns hits on the subject of romance, page 2, section Concept-based search, , 5<sup>th</sup> paragraph Linda).

Regarding claim 8, all the limitations of this claim have been noted in the rejection of claim 1. In addition, Linda discloses: wherein related terms are more specific than the search term (i.e., for example, the word heart, when used in the medical/health context, would be likely to appear with such words as coronary, artery, lung, stroke, cholesterol, pump, blood, attack, and arteriosclerosis. If the word heart

Art Unit: 2161

appears in a document with others words such as flowers, candy, love, passion, and valentine, a very different context is established, and the search engine returns hits on the subject of romance, page 2, section Concept-based search, , 5<sup>th</sup> paragraph Linda);

Regarding claim 9, all the limitations of this claim have been noted in the rejection of claim 1. In addition, Linda discloses: wherein the occurrence frequencies include mutuality between words within the document (i.e., some search engines consider both the frequency and the positioning of keywords to determine relevancy, reasoning that if the keywords appear early in the document, or in the headers, ...it also takes into consideration whether the documents that emerge as hits are frequently linked to other documents on the web, reasoning that if other folks consider them important, section Relevancy rankings, 5<sup>th</sup> paragraph , Linda).

Regarding claim 11, all the limitations of these claims have been noted in the rejection of claim 10 above, respectively. In addition, Linda disclose: wherein receiving the search term for the query includes receiving the search term for the query based on the displaying of the search term and the related items in a prior process (i.e., search refining options differ from one search engine to another, but some of the possibilities include the ability to search on more than one word, to give more weight to one search term than you give to another, and to exclude words that might be likely to muddy the results, you might also be able to search on proper names, on phrases, and on words that are found within a certain proximity to other search terms, section Refining your search, page 3, 2<sup>nd</sup> paragraph, Linda).

Regarding claim 13, all the limitations of these claims have been noted in the rejection of claim 10 above, respectively. In addition, Linda discloses: wherein reformulating the new query includes combining the new search term and the new related terms together using search operators (section Refining your search, page 3, 5<sup>th</sup> –10<sup>th</sup> paragraphs, Linda).

Regarding claim 14, all the limitations of this claim have been noted in the rejection of claim 13. In addition, Linda discloses: wherein the search operators are selected from the group consisting of AND, OR, NOT and NEAR, wherein the NEAR operator is satisfied when the new search term and at least one of the new related terms occur within a predetermine number of words within a sentence of a document (section Refining your search, page 3, 5<sup>th</sup> –10<sup>th</sup> paragraphs, Linda).

Regarding claim 31, all the limitations of this claim have been noted in the rejection of claim 1. In addition, Linda discloses: wherein the related terms are different than the search term and have similar meaning to the search term (i.e., for example, the word heart, when used in the medical/health context, would be likely to appear with such words as coronary, artery, lung, stroke, cholesterol, pump, blood, attack, and arteriosclerosis. If the word heart appears in a document with others words such as flowers, candy, love, passion, and valentine, a very different context is established, and the search engine returns hits on the subject of romance, page 2, section Concept-based search, , 5<sup>th</sup> paragraph Linda)..

Regarding claim 32, all the limitations of this claim have been noted in the rejection of claim 1. In addition, Linda discloses: wherein the search tem includes a

name of an organization, and wherein the related terms include at least one of a name of subsidiaries of the organization, a product name of the organization, and a stock symbol of the organization (i.e., in this example, the phrase "the company's" is an anaphoric reference back to IBM, col. 18, lines 54-67, Liddy).

Regarding claim 33, all the limitations of this claim have been noted in the rejection of claim 1 above. In addition, Linda discloses: wherein the data terms are generated based on mutual information associated with the search term and the related terms using a predetermined algorithm (i.e., some search engines consider both the frequency and the positioning of keywords to determine relevancy, reasoning that if the keywords appear early in the document, or in the headers, ...it also takes into consideration whether the documents that emerge as hits are frequently linked to other documents on the web, reasoning that if other folks consider them important, section Relevancy rankings, 5<sup>th</sup> paragraph , Linda).

Regarding claim 34, all the limitations of this claim have been noted in the rejection of claim 1 above. In addition, Linda discloses: wherein the mutual information is determined based on one or more weight factors of the search term and the related terms, the one or more weight factors representing occurrence frequencies of the respective search term, related terms and a combination of both search term and the related terms (i.e., some search engines consider both the frequency and the positioning of keywords to determine relevancy, reasoning that if the keywords appear early in the document, or in the headers, ...it also takes into

consideration whether the documents that emerge as hits are frequently linked to other documents on the web, reasoning that if other folks consider them important, section Relevancy rankings, 5<sup>th</sup> paragraph , Linda).

*Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 10, 12 15-21, 27-30 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Linda Barlow, copyright, 1996-1999. All rights reserved. Updated 04/11/2000.**

**<http://web.archive.org/web/20000815211428/http://www.monash.com/spidap4.html>**

**(hereafter Linda) in Liddy et al. (US 6026388) (hereafter Liddy).**

Regarding claims 10, 15 and 27 all the limitations of these claims have been noted in the rejection of claims 1 and 2. It is therefore rejected as set forth above. However, Linda didn't disclose: recursively performing the following until desired documents are found . On the other hand, Benitez-Jimenez discloses: recursively performing the following until desired documents are found (i.e., system reformulate a

new query representation based on the subject contents of the marked documents along with the original query. With the revised query the user may be asked to confirm the query representation, as was the case with the original query, dependent on user selected preference settings..., col. 35, lines 26-40, Liddy). Thus, at the time invention was made, it would have been obvious to a person of ordinary skill in the art to include the steps for recursively searching in the system of Linda as taught by Benitez-Jimenez. The motivation being to enable the search system to reformulate a new query representation based on the subject contents of the marked documents, along with the original query, retrieved all documents that relevant to the revised query (col. 35, lines 26-40, Liddy).

Regarding claims 12, and 16, all the limitations of these claims have been noted in the rejection of claims 10 and 15 above, respectively. In addition, Linda discloses: wherein the new search term is a related term from a prior search of the network of concept terms (i.e., search refining options differ from one search engine to another, but some of the possibilities include the ability to search on more than one word, to give more weight to one search term than you give to another, and to exclude words that might be likely to muddy the results, you might also be able to search on proper names, on phrases, and on words that are found within a certain proximity to other search terms, section Refining your search, page 3, 2<sup>nd</sup> paragraph, Linda)..

Regarding claim 17, all the limitations of this claim have been noted in the rejection of claims 15 and 13 above. It is therefore rejected as set forth above.

Regarding claim 18, all the limitations of this claim have been noted in the rejection of claims 17 and 14 above. It is therefore rejected as set forth above.

Regarding claim 19, all the limitations of these claims have been noted in the rejection of claim 1 above. However, Linda is silent to disclose: database that includes data terms (i.e., proper noun expansion database, wherein the data terms are from documents residing on websites located on servers across a network). On the other hand, Liddy discloses: an apparatus comprising: a database that includes data terms (i.e., proper noun expansion database (col. 18, lines 7-12, Liddy), wherein the data terms are generated (i.e., to generate these synonyms, a CN database having a list of CN synonyms, col. 18, lines 36-47) from documents residing on websites located on servers across a network (col. 6, lines 46-49; and col. 18, lines Liddy). Thus, at the time invention was made, it would have been obvious to a person of ordinary skill in the art to include a database that includes data terms, wherein the data terms are generated from documents residing on websites located on servers across a network in the system of Linda as taught by Liddy. The motivation being to enable the search system have an expansion database, helpful for refined the search term include the ability to search on more than one word, to give more weight to one search term.

In addition, Linda discloses: a concept network that: includes search terms and related terms that are linked together based on semantic relationships (i.e., for example,



Lycos ranks hits according to how many times your keywords appear in their indices of the document and in which fields they appear... hits are frequently linked to other documents on the web, section Relevancy rankings, 5<sup>th</sup> paragraph, Linda), the search terms and the related terms to locate portions of the documents based on a match between the searchable term, and the related terms and the data terms stored in the database (i.e., most of the search engines returns results with confidence or relevancy rankings, in other words, they list the hits according to how closely they think the results match the query, page 4, section Relevancy Rankings; 1<sup>st</sup> paragraph, Linda).

Regarding claim 20, all the limitations of these claims have been noted in the rejection of claim 22 above, respectively. In addition, Linda discloses: wherein the semantic relationships are selected from a group consisting of canonical (logical form), synonym, hyponym, hypernym, part (i.e., for example, the word heart, when used in the medical/health context, would be likely to appear with such words as coronary, artery, lung, stroke, cholesterol, pump, blood, attack, and arteriosclerosis. If the word heart appears in a document with others words such as flowers, candy, love, passion, and valentine, a very different context is established, and the search engine returns hits on the subject of romance, page 2, section Concept-based search, , 5<sup>th</sup> paragraph Linda).

Regarding claim 21, all the limitations of this claim have been noted in the rejection of claim 18. In addition, Linda discloses: wherein related terms are more specific than the search term (i.e., for example, the word heart, when used in the

medical/health context, would be likely to appear with such words as coronary, artery, lung, stroke, cholesterol, pump, blood, attack, and arteriosclerosis. If the word heart appears in a document with others words such as flowers, candy, love, passion, and valentine, a very different context is established, and the search engine returns hits on the subject of romance, page 2, section Concept-based search, , 5<sup>th</sup> paragraph Linda).

Regarding claim 28, all the limitations of these claims have been noted in the rejection of claim 27 above, respectively. In addition, Linda disclose: wherein receiving the search term for the query includes receiving the search term for the query based on the displaying of the search term and the related items in a prior process (i.e., search refining options differ from one search engine to another, but some of the possibilities include the ability to search on more than one word, to give more weight to one search term than you give to another, and to exclude words that might be likely to muddy the results, you might also be able to search on proper names, on phrases, and on words that are found within a certain proximity to other search terms, section Refining your search, page 3, 2<sup>nd</sup> paragraph, Linda).

Regarding claim 29, all the limitations of these claims have been noted in the rejection of claim 27 above, respectively. In addition, Linda discloses: wherein the new search term is a related term from a prior search of the network of concept terms (i.e., search refining options differ from one search engine to another, but some of the possibilities include the ability to search on more than one word, to give more weight to one search term than you give to another, and to exclude words that might be likely to

muddy the results, you might also be able to search on proper names, on phrases, and on words that are found within a certain proximity to other search terms, section Refining your search, page 3, 2<sup>nd</sup> paragraph, Linda).

. Regarding claim 30, all the limitations of these claims have been noted in the rejection of claim 27 above, respectively. In addition, Linda discloses: wherein reformulating the new query includes combining the new search term and the new related terms together using search operators (section Refining your search, page 3, 5<sup>th</sup> –10<sup>th</sup> paragraphs, Linda).

Regarding claim 32, all the limitations of this claim have been noted in the rejection of claim 1. In addition, Linda/Liddly discloses: wherein the search term includes a name of an organization, and wherein the related terms include at least one of a name of subsidiaries of the organization, a product name of the organization, and a stock symbol of the organization (i.e., in this example, the phrase "the company's" is an anaphoric reference back to IBM, col. 18, lines 54-67, Liddy). Thus, at the time invention was made, it would have been obvious to a person of ordinary skill in the art to include wherein the search term includes a name of an organization, and wherein the related terms include at least one of a name of subsidiaries of the organization, a product name of the organization, and a stock symbol of the organization in the system of Linda as taught by Liddy. The motivation being to enable the search system have an expansion database, helpful for refined the search term include the ability to search on more than one word, to give more weight to one search term.

***Allowable Subject Matter***

Claims 35 and 36 are allowed in light of the applicant arguments and in light of the prior art made of record.

The following is an examiner's statement of reasons for allowance: the prior art of record fails to disclose or suggest wherein the mutual information (MI) of the first term x and the second terms y is determined by  $M1(x, y) = f(x,y) / f(x) + f(y) - f(x, y)$ , wherein  $f(x, y)$  corresponds to an occurrence frequency of both search term and the related terms, wherein  $f(x)$  corresponds to an occurrence frequency of both the first term and the second term, wherein  $f(y)$  corresponds to an occurrence frequency of the second terms as recited in claims 35 and 36.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cindy Nguyen whose telephone number is 571-272-4025. The examiner can normally be reached on 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Apu Mofiz can be reached on 571-272-4080. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Cindy Nguyen

A handwritten signature in black ink, appearing to read 'Cindy Nguyen', with a large, stylized loop at the end of the signature.